SENATE INQUIRY INTO THE FUTURE SUSTAINABILITY OF AUSTRALIA'S STRATEGICALLY VITAL NAVAL SHIPBUILDING INDUSTRY

In June 2014, the Senate referred an inquiry into the future sustainability of Australia's strategically vital naval shipbuilding industry to the Senate Economics References Committee (**Committee**) for inquiry and report by 1 July 2015. The Committee reported on the tender process for the new supply ships in August 2014 and the acquisition process for future submarines in November 2014. The inquiry lapsed at the end of the 44th Parliament. In October 2016, the Senate agreed to the Committee's recommendation to re-refer the inquiry to the 45th Parliament with amended Terms of Reference, reflecting advances in the inquiry into the future of Australia's naval shipbuilding industry. The updated Terms of Reference are:

The future sustainability of Australia's strategically vital naval ship building industry, including:

a) the development of contracts relating to naval ship and submarine building;
b) the design, management and implementation of naval shipbuilding and submarine defence procurement projects in Australia;
c) the utilisation of local content and supply chains;
d) the integration of offshore design work and supply chains in Australia;
e) opportunities for flow on benefits to local jobs and the economy; and
f) any related matters.

This submission addresses the following key points:

Necessity of a strong sovereign shipbuilding capability for Australia that is internationally competitive. This will ensure that a continuous build and sustainment capability not only exists, but also is also commercially viable across naval projects and build cycles.

Investment by Government to support two world class ship building hubs for the current Royal Australian Navy (**RAN**) surface and sub-surface shipbuilding projects. This is an opportunity to ensure that a sovereign industry has the scale and capability across world-class facilities, workforce and supply chain required to meet the Commonwealth's ongoing and evolving requirements.

Effective management of the cyclical nature of the naval shipbuilding industry is needed to manage the 'boom-bust' cycle that has been prevalent in the Australian industry. Government requires a sovereign Australian shipbuilder as an industry partner with the depth and experience to deliver a sustainable plan for the sector, driving cost and performance to international best practice through continuity of management and operations.

The National Security imperative for Australia to maintain a strong domestic naval shipbuilding industry is a critical policy consideration for the Department of Defence in allocating investment, resources and capability planning. This will ensure a strong Australian Defence Force with domestically reliable Defence Industry suppliers for capability needs.

Ensuring the judicial application of Government policy in implementing the 2016 Defence White Paper (DWP) and its commitment to support a permanent naval shipbuilding industry in Australia. The sustainment of a permanent industry is contingent on the support of a Defence and Industry partnership in shipbuilding.

A sovereign Australian naval shipbuilding prime that is internationally competitive is now essential to achieve the Commonwealth's objectives. A sovereign prime as a true industry partner to the Commonwealth will sustain of a skilled workforce and local manufacturing supply chain that can competing successfully in naval export markets to the benefit of the broader Australian economy. There are few if any nations with comparable defence expenditure where domestic competition remains in naval shipbuilding. Rather than through competitive tendering, value for tax payer money can be assured through international benchmarking and appropriate contracting models that incentivise efficiency.

1. AN AUSTRALIAN SOVEREIGN SHIPBUILDING INDUSTRY

A sovereign shipbuilding capability is the ability to design, build, sustain, upgrade and export Australian built vessels, in Australian shipyards by Australian workers. The commitment to a continuous shipbuilding strategy has the potential to foster an internationally competitive industry which delivers sovereign capability whilst offering value for money. The scale of the planned RAN procurement programs provide a once in a generation platform for building an export competitive naval shipbuilding industry for Australia. Austal's continued success in securing export contracts from Australia is proof that Australian industry can tender successfully in a competitive international naval market.

A truly sovereign shipbuilding capability is contingent on that capability residing in an Australian shipbuilding prime. To ensure sovereignty is retained the Australian prime should be be an Australian owned, ASX listed company, headquartered in Australia. In this way the Commonwealth is assured that the Australian shipbuilder will be fully aligned with its interests, particularly when it comes to competing in the international naval export market.

Australia's naval shipbuilding should not be reliant on intellectual property from foreign designers and shipbuilders. This costly, inefficient and industry limiting paradigm is in-danger of continuing with the current RAN acquisition program. The contracting of SEA1180, SEA5000 and to some extent SEA1000, are an opportunity to fundamentally reset the model by which Australia approaches naval shipbuilding to develop industrial capability. The acquisition process has the ability to mandate requirements for the transfer of intellectual property and capability into the Australian workforce through a structured transition plan from the foreign prime as design authority to an Australian owned prime.

Intellectual property transfer is an enabler of future sovereign design capability for Australia, ending the reliance on overseas companies, fostering innovation in domestic industry and supporting an export industry. Military off the shelf (MOTS) has historically been the preferred option for RAN fleet capability acquisitions, on the basis of being a low risk option. However this limits the long-term development of internationally competitive Australian industry and ultimately the ability to deliver a differentiated and regionally superior RAN capability that meets the unique requirements of our Navy.

It is critical to a cost effective shipbuilding industry that the supply chain and workforce are sustainable. The large capability acquisition agenda of the Navy allows for an integrated industrial solution for shipbuilding, including investments in infrastructure and workforce training. A continuous build strategy delivered by a single sovereign Australian shipbuilder in partnership with Government provides the entire local supply chain with the reliability of a sustainable commercial industry, capable of investment. The uncertainty of multiple shipbuilders being selected across the current build schedule would almost certainly prevent an active naval export industry for Australia, compromising Australian jobs, Australian industry development, and the stability of a permanent sovereign shipbuilding capability.

The supplementation of domestic builds with export orders provides continuity in shipyard operations that strengthens both local workforce and supply chain. Defence and commercial exports alike create supply chain opportunities for local manufacturing companies that can be further multiplied by access to global supply chains. With an established presence in the United States, Austal has already created multiple opportunities for Australian companies to participate in its supply chain for its two major US Navy shipbuilding programs in Mobile, Alabama.

A sovereign shipbuilding partner is critical to providing effective management for strategic advantage and fleet capability demands. The RAND report highlighted the strategic benefits that partnership with industry offers the Australian fleet. Formalizing a partnership with a sovereign shipbuilder would allow a coherent operational philosophy and management approach to develop, maximising naval capability and value for money for the Commonwealth. A sovereign Australian shipbuilder operating under an internationally benchmarked contracting model would allow the Australian prime to cost effectively integrate the best solutions from the world's leading design houses and systems providers to support a world class Australian shipbuilding operation.

Potential monopoly risks associated with a single partner are managed through a contracting model where the Australian prime is engaged under an open book contract, which anticipates and rewards performance improvement on a pain-gain share basis. Austal successfully operates under similar contracting models in the United States as prime contractor for two concurrent US Navy build programs.

The Commonwealth can retains step in rights to manage the project in the event of poor performance and recourse provisions for the installment of an alternative shipbuilder if the initial encumbant is failing to perform. Monopoly risks can also be mitigated through Commonwealth retention of the facilities, as in Osborne or through the presence of multiple capable privately held facilities also supporting sustainment work as in Henderson. Operation of two continuous shipbuilding hubs provides another mechanism for internal benchmarking against key performance indicators between the two facilities, whilst common management ensures effective practices are rapidly shared between both.

2. Two world class shipbuilding hubs

The Commonwealth has committed to maintaining a permanent sovereign shipbuilding industry. The foundations of this continuous shipbuilding vision for Australia are the SEA 5000 Future Frigate program to be built in a major warship hub in Osborne, SA and the SEA1180 OPV to be built in a minor warship hub in Henderson, WA.

The award of the SEA1180 OPV and SEA5000 Frigate shipbuilding programs will define the structure of Australia's shipbuilding sector for the next 20 years, with a lasting impact beyond that. Despite the significance of those projects in not only cost but also time of construction and life of class, it is important to note that no Australian shipbuilder is currently engaged in the Competitive Evaluation Processes (CEPs) for SEA5000. Currently there is no formal link or indication that the execution of this project will be completed in a manner consistent with the Government's strategic objective of developing sovereign capability.

"The Government is delivering a long-term plan for Australia's naval shipbuilding industry to ensure the retention of a sovereign Australian shipbuilding industry and the jobs that go with it."

2016 Defence White Paper

For the long term viability of continuous naval shipbuilding in Australia, a sovereign prime shipbuilder must have facilities to both supply capability for the RAN and successfully export. Shipbuilder Austal has demonstrated the Henderson hub is export capable, however the Osborne shipbuilding hub has yet to demonstrate it can operate at an internationally competitive standard. Operating under the safety of Government ownership, Osborne's operations has been exempt from commercial failures, continuous business development and operational streamlining required by private sector shipyards. Likewise Osborne has thus far not entertained or attempted to compete in export markets.

Each hub as different requirements to ensure a successful continuous shipbuilding operation:

1. **Osborne** will require extensive upgrades and expansions to efficiently deliver the build programs earmarked for Techport. Osborne will also face challenges with regards to ramping-up a skilled workforce of sufficient size for both SEA5000 and SEA1000. Facilities and workforce expansion can best be coordinated by a proven commercial shipyard operator.

2. **Henderson** is a well-established hub for both build and sustainment operations of naval and commercial vessels. The commitment to build 10 of 12 SEA1180 vessels at Henderson will form an important base-load of capacity to support the hub, but given the relatively small annual spend value Henderson will require both concurrent sustainment work and exports to preserve a viable operational workforce and supply chain.

2.1 The Osborne Expansion

To deliver tax payer value for money, Osborne must implement world's best practices through an upgraded facility with advanced shipbuilding processes operating with sufficient scale to sustain a highly skilled workforce and local content supply chain. The existing ASC shipyard facilities at Techport are deficient in their scale, layout and integration. The facilities limit application of modern modular shipbuilding practices and lack the scale to manufacture all Frigate modules locally. Currently, the Osborne operation is assembling each Air Warfare Destroyer (AWD), however less than 30% of the modules were fabricated locally. The distributed build process used on AWD is inefficient and undermines the ability to achieve the required scale in the local workforce and supply chain in Osborne.

A world class naval manufacturing operation is defined by excellence in its facilities and operations. The facility layout must enable efficient flow of the materials, components and workforce, with equipment and infrastructure designed to maximize automation and productivity, coordinated through integrated information systems.

Australian shipbuilder Austal has successfully achieved this in its new modern shipyard in Mobile, Alabama where it directly employs more than 4000 shipbuilders in a single yard. The shipyard includes a state of the art modular manufacturing facility (MMF) which is the largest of its kind in any shipyard in the United States, enabling sector leading efficiencies. Australian led both the design and the start-up of operations in this shipyard , transferring technology and lessons learned from Austal's Henderson shipyard. This experience and the lessons learned in both Henderson and Alabama are highly relevant to any planned upgrade to Osborne. For example, following the initial shipyard construction phase, Austal managed a major upgrade to the facilities and the associated change in build strategy whilst the Littoral Combat Ship program was already underway.

Government has identified that major upgrades are required at the Osborne facilities and has engaged consultants OMT to design an infrastructure upgrade for Techport. Thus far, there has been limited engagement with industry who have real shipbuilding experience and understanding of the specifics in the Australian market. Notably, the potential shipbuilders for either SEA1180 or SEA5000 have not been engaged in shaping the design.

The planned infrastructure upgrade will take place at a highly complex time for Osborne. While the AWD program is nearing completion, the demands on Osborne will also include the commencement of the two OPVs and preparation for SEA5000. Potentially there could be three separate shipbuilders trying to operate simultaneously within the facility between 2018 and 2021 and this does not include the SEA1000 program, which has its own distinct requirements but will nonetheless overlap in some aspects. To minimize risk and disruption to all Osborne based programs during this critical period, the shipbuilding and facility upgrade should to be overseen by a single Australian prime, with experience of managing major facility upgrades concurrent to shipbuilding programs.

2.2 The Henderson Hub

Henderson is well established for both new builds and sustainment of naval and commercial vessels. The Henderson precinct operates with the confidence provided by an extensive local sub-contractor base, a strong local supply chain and reliable skilled workforce. The current operations at Henderson support the mid-cycle dockings of the Collins class, major upgrades to the Anzac Frigates and, for the last 19 years, have built all the Commonwealth's patrol boat fleets. At the same time the Henderson shipbuilding hub, in particular shipbuilder Austal, continues to demonstrate that it can be export competitive with Australian designed and manufactured naval and commercial vessels.

The Western Australian economy and the Henderson hub have benefitted and seen significant work from Oil & Gas and mining fabrication and support. The supply chain for the resources sector has proved complementary in terms of the skills and capability for the supply chain and blue-collar workforce required for shipbuilding. The slow-down in the resources sector has increased the availability of both skilled labour and well-equipped facilities for shipbuilding and sustainment work.

Henderson has been identified by the Commonwealth as the major build location for SEA1180, set to deliver 10 of 12 OPVS. The project will provide certainty and continuity of baseload on which further investments in facilities and workforce capability can be made and therefore the commitment to build these vessels in Henderson further enhances the export potential of the hub. The ability to supplement naval build contracts with exports offers the Government a unique ability to invest in the security of Australia's naval shipbuilding whilst de-risking the continuity and competitiveness of the industry.

Austal business model in Henderson has always relied on exports to support the build management and workflow sustainment. Austal continues to be successful in winning international tenders to export commercial and defence vessels, demonstrating that the Australian shipbuilding sector can be export competitive. This model requires long term planning by management to ensure that there is a reliable supply chain to support all build work and that the skilled workforce is consistently retained across projects.

> *"[Austal] have built a business that is built on exports. It's built with the confidence that Western Australians have, to look outwards and take on the world. That's what we're doing and we're backing them. We're putting in here $100 million over the next few years to get ready for the Offshore Patrol Vessels.."*

Prime Minister Malcolm Turnbull
20th February 2017

Limiting Henderson to a naval sustainment only hub is problematic for ensuring an efficient Australian shipbuilding industry. Sustainment and construction have complementary workforce and supply chain demands which work well as concurrent programs both across the hub and within a single facility. Common management for concurrent build and sustainment programs allows for increased stability of workflow and closes the loop on design improvements for next generation build upgrades.

The logic of 'sustain where you build' holds particularly for the Henderson hub, allowing the skilled workforce required for both to be shared creating stability in workforce demand. The model of separating build and sustainment programs into multiple geographical locations has the potential to compromise the efficiency, cost and quality of both the build and sustainment programs. By having Henderson as a joint build and sustainment hub, a single Australian shipbuilding Prime will have the ability to have sustainable workflow management across both hubs and national supply chain co-ordination to ensure viable operation in both locations.

With $2.4 billion set to be invested in upgrading Defence facilities across Western Australia over the next decade, there is a substantial opportunity to ensure the shipbuilding and sustainment facilities and operating model is world-leading. As noted in the Defence Integrated Investment Program accompanying the 2016 DWP: "*a whole-of-nation, whole-of-industry and whole-of-capability approach across all the fundamental inputs to capability – including workforce and infrastructure, both in Defence and industry, will be required for Australia to succeed in this massive endeavor*". The industry developed in Western Australian through existing operations supports a strategic shipbuilding hub for building and sustainment projects that is complementary to the major building hub in Osborne.

3. National Security

A sovereign naval shipbuilding industry contributes to national security by fostering sustainment ability ensuring the fleet can be maintained without foreign assistance.
The lack of certainty regarding naval acquisition programs has limited industry investment in shipbuilding facilities, in local design capability and in capability across the broader workforce and supply chain. This lack of capability is a national security risk. Whilst there may be debate over the capability requirement for naval shipbuilding in Australia, there

should be no debate over the need to be able to undertake through life of class support of Australian ships locally.

Despite the lack of certainty in naval contracts, Australia continues to have a viable competitive shipbuilding industry, supported by a skilled and experienced workforce. Importantly this shipbuilding industry deepens and broadens the skill and experience base available for through life support or sustainment of the Commonwealth fleets.

Minimising dependency on foreign industry and capability to perform activities such as in-service ship alterations, modernisation and life-of-class maintenance ensures the capabilities necessary for major repairs and modifications exist in-country in times of conflict. To have a truly sovereign shipbuilding capability and an efficient continuous industry in operation it is crucial to have in country sustainment. From a defence and national security perspective, it would be a national failure if the Commonwealth had to rely on foreign expertise or offshore facilities to provide through life support and maintenance of our Commonwealth owned vessels. In times of a national emergency there would be a requirement for this local support, and the impact of requiring vessels to go offshore for maintenance could be disastrous for the Navy and Border Force if this put vessels in harm's way during transit.

A naval shipbuilding industry is a sovereignty issue that not only encompasses build, but also sustainment of the naval fleet. Whilst some argue there is no evidence to suggest ships must be built in Australia to be sustained here, taking a systems approach suggests it would be an advantage to national security to do so. An assured naval shipbuilding industry will attract workers to both build and sustainment activity, increasing the skill base to assure its viability. To achieve this, Defence and industry must be in a partnership where both are experiencing value-add from the partnership. Defence capability acquisition should be done with the dual objectives of achieving the best value for money whilst also maximising Australian content.

4. Government Policy Settings

The 2016 DWP identifies the need for development of future sovereign capability, but lacks a strategic implementation plan. The ceding of prime contracting responsibility to international primes, almost all of whom are sovereign shipbuilders in their respective home markets, inherently undermines the ability to develop a truly sovereign capability of our own.

To sustain permanent naval shipbuilding, the Commonwealth's shipbuilding partner must be a commercial sovereign company with the required experience to manage these critical capability acquisition and sustainment programs. The RAN's next generation fleet will occur at great cost, only a commercially disciplined shipbuilder will be able to deliver the build program on time and within budget.

Without a strong policy initiative, advancing sovereign capability the considerable Commonwealth investment into defence infrastructure will continue to benefit international primes at the expense of future home grown sovereign capability and export opportunities.

4.1 Whole of Government Approach

The lack of advocacy for Australian defence industry by successive Governments has greatly hampered the ability for Australian defence companies to increase their international footprint. The introduction of a Defence Industry portfolio is a substantial step in Government supporting future international opportunities for Australian Defence Industry.

The Commonwealth needs to continue taking a more active role in endorsing and supporting the sale of Australian defence products as the basis of both economic and strategic success.

In a highly competitive market where governments act as conduits to customers (other governments), it is critical that the Commonwealth, in line with its international counterparts, continues to endorse and market the capability of Australia's companies. An export market will not only strengthen the domestic industry but will also assist in lowering build and sustainment costs for the Commonwealth.

4.2 Continuous Build

A continuous sovereign shipbuilding capability ensures reliable, cost efficient supply of capability for the RAN. Continuous builds allow for upgrades to capability and class to occur with better long term planning and implementation, offering more certainty for supply chain demand, work force stability and industry investment. The 2016 Defence White Paper continuous shipbuilding agenda seeks to prevent the interruptions to the workforce incurred by the previous model of rolling acquisitions.

The inherent issues of the builder 'chopping and changing' is not resolved by a commitment to a continuous shipbuilding program alone, there also needs to be continuous management across the projects. The benefit of continuous acquisition is compromised without consistency in operational management as there can be no long term build strategy across programs with requirements subject to change. When build reliability, cost efficiency and acquisition schedules are all subject to uncertainty, a yard is incapable of credible management planning for sustaining a commercial operation. Where one shipbuilder is accountable across programs and locations, best practice and learnings are more readily transferred, generating savings and risk reduction for RAN.

4.3 Operational transfer of intellectual property to an Australian Prime

Another element missing from discussions surrounding an internationally competitive naval shipbuilding industry in Australia is the need to invest in Australian design, naval architecture and engineering capability. The demands of the RAN fleet capability require design teams to work years on next generation vessels years in advance of acquisition contracts so as to ensure an indigenous design is available before end of life for a class. The lack of planning and investment into design activity over time has resulted in the need for foreign designs for the next generation replacements to the Armidale and Anzac classes, and the fleet replenishment ships HMAS SIRIUS and SUCCESS. Continuation of this practice is fundamentally at odds with the aspiration to develop a sovereign, export capable Australian shipbuilding enterprise.

Failure to mandate an operational transfer to an Australian prime in the tender effectively cedes sovereign capability for the future of naval shipbuilding in Australia. Through having a dedicated partner (rather than a foreign Prime managing an Australian workforce) the Government can mandate the involvement of a sovereign shipbuilder. Without implementing processes to support a sovereign shipbuilder, including the transfer of IP, through required tender outcomes or a policy framework coordinating the national shipbuilding agenda, there is industry uncertainty compromising investment opportunities.

The acquisition process for both SEA5000 and SEA1180 appear to lack sufficient protections for, or the advancement of, a sovereign shipbuilding capability. Despite the connection between the two programs to sustain a workforce requirement in Osborne, the programs appear to be progressing for the most part independently. With no overarching policy framework coordinating the naval shipbuilding agenda, the Government is at risk of persisting with the status quo and failing to address the historical challenges of naval shipbuilding in Australia.

For SEA5000, an Australian shipbuilder should act as prime, managing and building the Commonwealth's preferred designs, either from the program outset or in a managed transition from a foreign Designer as prime to an Australian shipbuilder as prime. This "Australian-isation" process should commence from "Vessel One" with progressive requirements to ensure the Australian shipbuilder increasingly takes a greater share of the project management and design function to ensure that an Australian sovereign capability is developed for the future.

4.4 Internationally Competitive Industry

This Senate Inquiry has the opportunity to recommend to Government that it is standard policy in Australia for all CEP and tenders from shipbuilding programs to require an Australian shipbuilder deliver the project. As has been done for SEA1180, RAN tenders should require the development of internationally competitive (export capable) sovereign Australian Shipbuilding capability.

For Australia to operate an internationally competitive and commercially viable industry, it must have an export capability to supplement the naval build requirements. This will require next-generation shipbuilding facilities, similar to Austal's yard in Mobile. Where facilities investment and upgrades are required the shipbuilding partner should be engaged as early as possible to undertake a comprehensive study of the infrastructure requirements and a plan to develop the local supply chain to ensure necessary materials and workforce are available. Failure to include the shipbuilders input into the design process for facility upgrades undermines the long term viability and commercial operation of the facility.

5. Conclusion

It is a strategic imperative for the nation to maintain strong shipbuilding capabilities, across workforce and supply chain, necessary for the sustainment and modification of complex naval vessels, particularly in times of conflict. Maintaining a domestic capability in naval engineering and design is also strategically important, as the unique demands of the Commonwealth fleets mean that both new and existing vessels will always require some level of customisation. Furthermore, the building of complex warships and submarines is one of the leading examples of complex manufacturing in the Australian economy.

Austal envisages a future where the Australian shipbuilding hubs at Osborne and Henderson operate with a proven track-record of internationally competitive performance. This future has industry as a partner to Government for both the construction and sustainment of all classes of Australian naval surface vessels. This future has value for money for the Australian taxpayer assured by an internationally proven contracting model for an Australian prime contractor. Austal also sees a future where exports of Australian made naval vessels supplement domestic builds and modification programs, ensuring that a critical level of workforce capability is sustained over the long term through inevitable peaks and troughs in domestic demand.

Austal is uniquely positioned, with the relevant experience, to partner with the Commonwealth as the sovereign prime shipbuilder. Austal, is a home grown Australian shipbuilder, ASX listed company and operating from global headquarters in Australia. Austal has leveraged its initial Australian operation to become an international prime naval shipbuilding operation with proven export ability. Since 1988, Austal has constructed surface vessels for the Commonwealth. Austal operates multiple shipyards across the world, including Mobile, Alabama where the Littoral Combat Ship is built for the US Navy. Austal's proven record of success, for commercially viable, next-generation shipbuilding management is internationally acclaimed. As an established international prime, with considerable experience, Austal is uniquely qualified to manage the RAN's build and sustainment programs, to secure a viable permanent sovereign shipbuilding industry capable of exports.